



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, ILLINOIS 60604**

**DATE:** DEC 04 2019

**SUBJECT:** CLEAN AIR ACT INSPECTION REPORT  
Postle Aluminum Co. (Postle), Cassopolis, Michigan

**FROM:** Linda H. Rosen, Environmental Engineer  
AECAB (IL/IN)

**THRU:** Nathan Frank, Section Chief  
AECAB (IL/IN)

**TO:** File

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**BASIC INFORMATION**

**Facility Name:** Postle Aluminum Co. (Postle)

**Facility Location:** 201 North Edwards Street, Cassopolis, Michigan

**Date of Inspection:** 10/07/2019

**EPA Inspector(s):**

1. Linda H. Rosen, Environmental Engineer
2. Sarah Clark, Environmental Engineer

**Other Attendees**

1. Bryan Fehnel, General Manager, Postle Aluminum
2. Mark Smith, Vice-President of Operations, Postle Aluminum
3. Kevin Temple, Paint Line Manager, Postle Aluminum (during paint line tour)

**Contact Email Address:** BFehnel@dwaluminum.com

**Purpose of Inspection:** Inspect Postle with respect to Clean Air Act requirements.

**Facility Type:** Aluminum extrusion manufacturing facility

**Arrival Time:** 12:50 pm EST

**Departure Time:** 3:35 pm EST

**Inspection Type:**

- ☒ Unannounced Inspection
- ☐ Announced Inspection

**OPENING CONFERENCE**

- ☒ Credentials Presented
- ☒ CBI warning to facility provided

The following information was obtained verbally from Postle representatives unless otherwise noted.

**Company Ownership:** In 2015, Thor bought Postle Aluminum Co. Postle Aluminum Co. is a subsidiary of Thor. Postle Extrusion, which is at this location in Cassopolis, Michigan, is a division of Postle Aluminum Co.

**Process Description:**

The facility produces aluminum extrusions of various sizes and shapes to industry. About 80 percent of Postle's product goes to recreational vehicle (RV) manufacturers. About 20 percent goes to the cargo trailer and fencing industries.

Aluminum alloy logs of 20-24 feet in length are heated in gas-fired furnaces at about 900 °F to soften them. The logs are made of aluminum, magnesium, silicon, iron, copper, etc. Three different alloys are used with 6063 being standard. The logs are sheared to shorter lengths and then pressed through heated dies to form shapes. Once the shape is formed, the material goes to a handling system to cool off. A hydraulic machine stretches the material about 2-3 inches or 1 percent of its length. The product is then cut, placed on racks, tempered in gas fired ovens to 350-400 ° F for about 8 hours per cycle, cooled and then packed into bundles and sent to the warehouse. About 5-7 percent of the extrusions are painted. Painting occurs after they are cooled and prior to packing. Incoming shipments are tracked by weight and everything is tracked by the facility's software system, an Enterprise Resource Planning (ERP) system called EPICS (Extrusion Production Information Control System) which is designed for aluminum extruders.

There are three plants at the facility which contain various processes including extrusion, packing and painting. The facility claimed the number of presses, the dates of installation, the duration of the process, and all the inspection photos as Confidential Business Information (CBI).

Extrusions are painted using a vertical reciprocating paint system located in the paint room. There are two booths, each with its own reciprocator which paint opposite sides of the same parts. A high-speed disk spins to atomize the paint. Parts are hung on a conveyor and electrostatically charged so the paint sticks to the metal. Once the parts are painted, they remain hanging in the unheated flash area for 5-10 minutes to get tacky. Then the parts go to the cure oven. One type of paint is used in about 10 colors. About 70-80 percent of the paint is done in black. After the oven, there is an open area at the back of the oven where employees physically

remove the parts from the conveyor. At this point the facility believes all volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) have been eliminated.

The paint line is controlled by a regenerative thermal oxidizer (RTO) which the facility claims has 98-99 percent destruction efficiency. The RTO captures fumes from the paint room (including the paint booths and the flash area), the paint kitchen (including mixing), and the cure oven. The cooling area is not controlled.

The spray guns are flushed out in the paint kitchen. There are four paint stations (pumps). The mixer pumps send paint to the reciprocators.. When the facility changes colors, they stop the pump and run xylene through the guns and flush the lines and then add new paint. The facility tracks xylene usage daily. The facility records the gallons used of xylene and paint daily using a metered system or a yardstick. They write it down manually and then transfer to an Excel sheet.

Maintenance on the RTO includes temperature probe changes and electric motor valve changeouts. The facility has a maintenance program and do maintenance every six months. They take the paint line offline for four days in July and December and go through a list of maintenance items.

Initially the facility said the RTO temperature is kept at about 1200 °F but during the tour they stated the minimum temperature is 1400 °F. The temperature is monitored continuously and recorded on a circular chart recorder. There are various alarms, but the facility did not immediately know what the setpoints were. The thermocouple is changed when the temperatures “don’t make sense.”

**Staff Interview:** Approximately 230 employees work at this location. All Postle locations (this plant, distribution, fabrication, and warehouse) employ approximately 500-700 people total. For about the last 13 months, this facility has been operating 24 hours per day, 6 days per week. The facility had been operating 24 hour per day, 7 days per week but a downturn in the RV industry has lessened demand. The paint line has also decreased production due to the RV market decreasing. The facility used to paint 16 hours per day, six days per week but in the last 3-4 months has been painting 8 hours per day, 4-5 days per week.

With respect to the paints used, the facility initially said no thinners were added to the paint but later Mr. Temple said that sometimes thinner is added when the paint gets too thick.

The RTO was tested in 2015 and demonstrated 98-99 percent efficiency. The facility has not received word from the state of Michigan as to whether another test is required. Capture testing was also performed, but the facility was unsure of the method. The facility also stated that the state permitting has not mentioned subjectivity to the NESHAP 6H rule. The facility has asked Michigan about an operating permit and Michigan has said that a permit to install (PTI) is sufficient.

The facility stated that the emissions are well below 100 tons per year (tpy) major VOC levels and well below 10 tpy major HAP levels. Michigan requires them to keep emissions calculations but they do not have to report them.

## **TOUR INFORMATION**

**EPA toured the facility:** Yes

### **Data Collected and Observations:**

We started in Plant 2. We observed the tempering oven (Photo 1), the preheat oven and cutter (Photo 2), and the extruder where metal was being pressed through the die (Photos 3 and 4). Every 10 billets or so, they add wax to the die to keep it from sticking and that is the source of the flame. There was a candle-like burning smell in the area. We observed the cooling fans and cooling rack (Photo 5). We observed the chip collector which collects chips from sawing (Photo 6). The collector had a filter on it but there were emissions coming off the unit that are not visible in the photo. There were also black marks on the ceiling over the filter bank. We observed the extrusion oven (Photo 7).

We observed the paint line. We observed the hanging parts on the conveyor (Photo 8). There was a 4-stage washer (Photo 9). Stage 1 is the alkaline cleaner; stages 2 and 3 are ionized water and stage 4 is a liquid solution of zirconium which etches the part and allows the paint to stick. No alcohols or solvents are used in the wash. We entered the paint kitchen which had very strong odors. The paint kitchen contained numerous barrels of paint (Photo 10). We observed the dip stick which is used to measure paint usage (Photo 11). We observed the four ventilation take up points for fumes. I held my notepad up to one of the vents and the paper stuck to it (Photos 12-13). The other three intakes were blocked by barrels (Photos 14-16). We went outside and saw the duct from the paint kitchen (Photo 17) and where such duct joins the duct from the oven to the RTO (Photo 18). Photo 19 shows the RTO and stack. There were organic odors near the RTO. The RTO pressure gauge was registering 11.5-12 inches of water column (Photo 20).

We returned to the paint kitchen. There were four paint stations and one paint cleaning station. Xylene is used for the cleaning. Dirty xylene is sent off for reclamation. I took photos of the paint and xylene barrels (Photos 21-22). The size of the room was approximately 40 feet by 16 feet with two doors. One door was very difficult to open, indicating negative pressure.

We toured the paint line room. There were two booths. Photo 23 shows paint booth 1 and Photo 24 shows paint booth 2. There was suction on top of each booth. There were also three fresh air intakes along the wall (Photo 25). The door to the room where paint booth 1 was located was difficult to open, indicating negative pressure in the room. There were two doors and a forklift opening. The forklift opening is usually closed. We observed the duct on top of the RTO (photo 26). The opening for the parts stays open all the time (Photo 27).

We checked the RTO temperature circular chart recorder (Photos 28-32). The monitor idled on Saturday-Sunday at about 1700 °F using natural gas. The LED monitor was now reading 1944 °F. The facility cannot paint unless the RTO is operating. When it gets up to 2050 °F, an alarm sounds. When it gets up to 2100 °F, the paint line shuts down. A temperature of 1400 °F is the lower set point but they were unsure if there was a shutdown or alarm associated with the lower temperature. Photo 33 shows the RTO shutdown protocol which stated: "In the event the RTO

faults and shuts down, it is critical to ensure the blower and fans remain running to continue drawing air from the booths, ovens, and the paint kitchen.” Photo 34 shows parts coming out of the oven. The RTO is connected to the oven. The oven is not at negative pressure.

Next, we visited Kevin Temple’s office to see the record sheet for recording paint and xylene usage or aromatic solvent (thinners) if needed. Photos 35 and 36 are of the record sheet dated 10/3/2019. The facility said the date represented the date the form was printed; the usage numbers were for the period Friday-Saturday, October 4-5. Then Kevin showed us the consumable inventory form from 10/2/2019. It showed gallons starting, gallons received, gallons removed, and gallons used. The sheets represent one day. We saw where the Safety Data Sheets (SDS) are kept. There is a book on the wall and they also maintain electronic versions.

**Photos and/or Videos:** were taken during the inspection.

**Field Measurements:** were not taken during this inspection.

### **RECORDS REVIEW**

1. September 2019 paint and chemical usage. This document was taken from the facility.
2. Consumable inventory for 10/2/2019. This document was taken from the facility.

### **CLOSING CONFERENCE**

**Concerns:** We pointed out that we had seen emissions coming off the chip collector. This could affect indoor air quality.

### **SIGNATURES**

Report Author: \_\_\_\_\_

Date: \_\_\_\_\_

Section Chief: \_\_\_\_\_

Date: \_\_\_\_\_

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**APPENDICES AND ATTACHMENTS**

1. Media Appendix

**Facility Name:** Postle Aluminum Co. (Postle)

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**APPENDIX A: DIGITAL IMAGE LOG**

<b>1. Inspector Name:</b> Linda Rosen or Sarah Clark	<b>2. Date(s) of Inspection:</b> 10/07/2019
<b>3. Company/Facility Name:</b> Postle Aluminum Co. (Postle)	<b>4. Street Address, City, State:</b> 201 North Edwards Street, Cassopolis, Michigan
<b>5. Number of Images:</b> 36	<b>6. Archival Record Location:</b> Linda Rosen One Drive: "CBI: Postle Aluminum Inspection Photos, October 7, 2019, Cassopolis, Michigan"

Image No.	File Name	Date and Time (EST)	Latitude and Longitude	Description of Image
1	PA07001.JPG	2019:10:07 14:10:44	41.911667, -85.993611	Tempering oven
2	PA07002.JPG	2019:10:07 14:13:15	41.911667, -85.993611	Preheat oven and cutter
3	PA07003.JPG	2019:10:07 14:14:36	41.911667, -85.993611	Extruder
4	PA070004.JPG	2019:10:07 14:15:07	41.911667, -85.993611	Extruder
5	PA070005.JPG	2019:10:07 14:18:49	41.911667, -85.993611	Cooling racks
6	PA070006.JPG	2019:10:07 14:20:28	41.911667, -85.993611	Chip collector
7	PA070007.JPG	2019:10:07 14:23:25	41.911667, -85.993611	Extrusion oven
8	PA070008.JPG	2019:10:07 14:23:53	41.911667, -85.993611	Parts on paint line conveyor
9	PA070009.JPG	2019:10:07 14:28:08	41.911667, -85.993611	4-stage washer
10	PA070010.JPG	2019:10:07 14:31:08	41.911667, -85.993611	Paint kitchen
11	PA070011.JPG	2019:10:07 14:32:14	41.911667, -85.993611	Dip stick in paint kitchen
12	PA070012.JPG	2019:10:07 14:33:33	41.911667, -85.993611	Intake showing negative pressure in paint kitchen
13	PA070013.JPG	2019:10:07 14:34:48	41.911667, -85.993611	Intake
14	PA070014.JPG	2019:10:07 14:34:54	41.911667, -85.993611	Blocked intake
15	PA070015.JPG	2019:10:07 14:34:59	41.911667, -85.993611	Blocked intake

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16	PA070016.JPG	2019:10:07 14:35:05	41.911667, -85.993611	Blocked intake
17	PA070017.JPG	2019:10:07 14:35:58	41.911667, -85.993611	Duct from paint kitchen
18	PA070018.JPG	2019:10:07 14:37:45	41.911667, -85.993611	Duct from paint kitchen joining duct from oven to RTO
19	PA070019.JPG	2019:10:07 14:38:26	41.911667, -85.993611	RTO and stack
20	PA070020.JPG	2019:10:07 14:39:23	41.911667, -85.993611	Pressure gauge for gas on RTO
21	PA070021.JPG	2019:10:07 14:43:14	41.911667, -85.993611	Xylene cleaning and drum in paint kitchen
22	PA070022.JPG	2019:10:07 14:44:16	41.911667, -85.993611	Cleaning/paint station
23	PA070023.JPG	2019:10:07 14:47:39	41.911667, -85.993611	Paint booth 1 with reciprocator
24	PA070024.JPG	2019:10:07 14:48:35	41.911667, -85.993611	Paint booth 2 with reciprocator
25	PA070025.JPG	2019:10:07 14:50:43	41.911667, -85.993611	Air intakes
26	PA070026.JPG	2019:10:07 14:51:29		Duct on top of RTO
27	PA070027.JPG	2019:10:07 14:54:06		Room opening for parts
28	PA070028.JPG	2019:10:07 14:55:42		Temperature circular chart readout for RTO
29	PA070029.JPG	2019:10:07 14:55:54		Temperature circular chart readout for RTO
30	PA070030.JPG	2019:10:07 14:56:28		Temperature circular chart readout for RTO
31	PA070031.JPG	2019:10:07 14:56:34		Temperature circular chart readout for RTO
32	PA070032.JPG	2019:10:07 14:56:45		Temperature circular chart readout for RTO
33	PA070033.JPG	2019:10:07 15:03:19		RTO shutdown protocol on RTO panel
34	PA070034.JPG	2019:10:07 15:04:52		Parts coming out of oven
35	PA070035.JPG	2019:10:07 15:12:02		10/3/2019 paint usage sheet
36	PA070036.JPG	2019:10:07 15:12:07		10/3/2019 paint usage sheet